AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of claims

hCV	rs	SEQ ID NO	DATA TABLE
hCV16021387	rs2476601 Top Hit	36673	6
hCV9272397	rs2305480	34836	6
hCV25603489	none	30710	6
hCV7499127	rs980984	13392	6
hCV11559107	rs2626053	20612	6
hCV8915168	rs1133833	30382	6
hCV15879463	rs2275689	32827	6
hCV22273515	rs2243525	29676	6
hCV15976147	rs2304974	35519	6
hCV9692842	rs1375067	11389	6

1. (Currently amended) A method for identifying an individual who has an altered risk for developing an autoimmune disease, comprising detecting a single nucleotide polymorphism (SNP) as represented by a nucleotide sequence selected from the group consisting of SEQ ID NOs 36673, 34836, 30710, 13392, 20612, 30382, 32827, 29676, 35519, 11389 ~~in any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582~~ in said individual's nucleic acids, wherein the presence of the SNP is correlated with an altered risk for autoimmune disease.

2. (Original) The method of claim 1 in which the altered risk is an increased risk.

3. (Original) The method of claim 2 in which said individual presently has the autoimmune disease.

4. (Original) The method of claim 1 in which the altered risk is a decreased risk.

5. (Canceled).

6. (Original) The method of claim 1 in which detection is carried out by a process selected from the group consisting of: allele-specific probe hybridization, allele-specific primer extension, allele-specific amplification, sequencing, 5' nuclease digestion, molecular beacon assay, oligonucleotide ligation assay, size analysis, and single-stranded conformation polymorphism.

7. (Original) The method of claim 1, wherein said autoimmune disease is rheumatoid arthritis.

8. (Original) The method of claim 1, wherein said autoimmune disease is selected from the group consisting of type 1 diabetes, multiple sclerosis, systemic lupus erythematosus, inflammatory bowel diseases, psoriasis, thyroiditis, celiac disease, pernicious anemia, asthma, vitiligo, glomerulonephritis, Graves' disease, myocarditis, Sjogren disease, and primary systemic vasculitis.

9. (Original) An isolated nucleic acid molecule comprising at least 8 contiguous nucleotides wherein one of the nucleotides is a single nucleotide polymorphism (SNP) selected from any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582, or a complement thereof.

10. (Original) The isolated nucleic acid molecule of claim 9, wherein the SNP is selected from the group consisting of the SNPs set forth in Tables 3 and 4.

11. (Original) An isolated nucleic acid molecule that encodes any one of the amino acid sequences in SEQ ID NOS:670-1338.

12. (Original) An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS:670-1338.

13. (Original) An antibody that specifically binds to a polypeptide of claim 12, or an antigen-binding fragment thereof.

14. (Original) The antibody of claim 13 in which the antibody is a monoclonal antibody.

15. (Original) An amplified polynucleotide containing a single nucleotide polymorphism (SNP) selected from any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582, or a complement thereof, wherein the amplified polynucleotide is between 16 and 1,000 nucleotides in length.

16. (Original) The amplified polynucleotide of claim 15 in which the nucleotide sequence comprises any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582.

17. (Original) An isolated polynucleotide which specifically hybridizes to a nucleic acid molecule containing a single nucleotide polymorphism (SNP) in any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582.

18. (Original) The polynucleotide of claim 17 which is 8-70 nucleotides in length.

19. (Original) The polynucleotide of claim 17 which is an allele-specific probe.

20. (Original) The polynucleotide of claim 17 which is an allele-specific primer.

21. (Original) The polynucleotide of claim 17, wherein the polynucleotide comprises a nucleotide sequence selected from the group consisting of the primer sequences set forth in Table 5 (SEQ ID NOS:49,583-50,230).

22. (Original) A kit for detecting a single nucleotide polymorphism (SNP) in a nucleic acid, wherein the kit comprises the polynucleotide of claim 17, a buffer, and an enzyme.

23. (Currently amended) A method of detecting a single nucleotide polymorphism (SNP) in a nucleic acid molecule, comprising contacting a test sample with a reagent which specifically hybridizes to a SNP as represented by a nucleotide sequence selected from the group consisting of SEQ ID NOs 36673, 34836, 30710, 13392, 20612, 30382, 32827, 29676, 35519, 11389 ~~in any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582~~ under stringent hybridization conditions, and detecting the binding of the reagent with the nucleic acid molecule.

24. (Original) The method of claim 23 in which detection is carried out by a process selected from the group consisting of: allele-specific probe hybridization, allele-specific primer extension, allele-specific amplification, sequencing, 5' nuclease digestion, molecular beacon assay, oligonucleotide ligation assay, size analysis, and single-stranded conformation polymorphism.

25. (Original) A method of detecting a variant polypeptide, comprising contacting a reagent with a variant polypeptide encoded by a single nucleotide polymorphism (SNP) in any one of the nucleotide sequences of SEQ ID NOS:1-669 and 1339-49,582 in a test sample, and detecting the binding of the reagent to the polypeptide.

26. (Original) A method for identifying an agent useful in therapeutically or prophylactically treating rheumatoid arthritis, comprising contacting the polypeptide of claim 12 with a candidate agent under conditions suitable to allow formation of a binding complex between the polypeptide and the candidate agent, and detecting the formation of the binding complex, wherein the presence of the complex identifies said agent.